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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/905,189	07/13/2001	Guang-Jong Jason Wei	163.1438US01	3059

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EXAMINER
PAK, JOHN D

ART UNIT	PAPER NUMBER
1616	

DATE MAILED: 03/26/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.	Applicant(s)
09/905,189	WEI et al.
Examiner	**Art Unit**
John Pak	1616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12/2/02, 1/13/03, 1/15/03*

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-47* is/are pending in the application.

4a) Of the above, claim(s) _____ is/are withdrawn from consideratio

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-47* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claims _____ are subject to restriction and/or election requirement

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examine

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some* c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

a)☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). *5,9*
4) ☐ Interview Summary (PTO-413) Paper No(s). _____
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

Claims 1-47 are pending in this application.

Applicant's election with traverse of sebacic acid esters and adipic acid esters in Paper No. 10 (1/15/03) is acknowledged. The traversal is on the ground(s) that all esters of sebacic acid and adipic acid can be searched together without undue burden. Applicant's comments are noted and the claims will presently be examined to the extent that they read on all such esters.

The requirement is still deemed proper and is therefore made FINAL.

Changes to the following observations regarding the claim language are strongly suggested.

(1) Numerous dependent claims recite only one ingredient, but the composition is claimed in terms of "comprising." This makes for a composition that comprises only one ingredient. See e.g. claim 5.

(2) Claim 7 does not have any transitional language.

(3) In claim 18, "stabilizer comprises" is recite twice.

(4) In claim 20, "tetraethanolamine" appears to be a mistake. An amine cannot take four ethanol groups without changing into a quaternary ammonium.

(5) Claim 47 is somewhat internally inconsistent. While bottling of food, beverages or pharmaceuticals is claimed, only a "beverage container" is contacted with the composition (see line 3).

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless -
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-33, 35, 42-46 are rejected under 35 U.S.C. 102(b) as being anticipated by Carr et al. (WO 98/28267).

Carr et al. explicitly disclose an in situ antimicrobial and disinfecting composition wherein a peroxygen compound and a diester of the formula R^1–O–CO–R^2–CO–O–R^3, wherein R^1 and R^3 each represent C1-4 alkyl and R^2 represents C2-6 alkylene, are reacted to produce an aqueous percarboxylic acid solution (see the paragraph bridging pages 2 and 3). 3-90 wt% diester + 2-30 wt% hydrogen peroxide + 5-90 wt% water is disclosed (p. 3, lines 7-16; p. 7). The diester precursor is taught to be advantageous because the percompound containing an ester group and a peracid group has been found to be particularly effective as a disinfectant compared with the corresponding acid peracid)p. 4, lines 16-23). Examples of disters include dimethyl esters of adipic acid, glutaric acid and succinic acid (p. 5, lines 20-34; see from p. 14, line 30 to p. 16, line 9). An acid catalyst that can be inorganic or *organic* is used (p. 6, lines 13-18). Dilute formulations containing 50-90 wt% water is disclosed (p. 8, first paragraph; see also p. 13, lines 8-14). First forming a more concentrated solution and then diluting with water is disclosed (paragraph bridging pages 8 and 9). 0.075-0.3 wt% stabilizers such as ethylidene diphosphonic

acid and others are disclosed (p. 10, lines 11-24). HEDPA, another term for HEDP, is exemplified (pp. 15-16). Various substrates are disclosed for applications. Liquid substrates such as water used in food engineering, breweing, wine making waters and alcohol distilling, hard surfaces, contaminated articles intended for re-use in food processing, catering, domestic or hospital environment, plant or apparatus, containers, machinery, plant and pipework are all disclosed as suitable substrates to apply the in situ antimicrobial composition (see from p. 13, line 21 to p. 14, line 23). Immersion or spraying of articles is taught (p. 14, lines 12-15). See also all the claims, claims 1-43. Disinfecting temperature range of about 4°C to boiling point of the solution is disclosed (p. 13, lines 15-20). Activity against the fungus *Aspergillus niger* is disclosed (p. 21, Example 42).

It is noted that Carr et al. do not explicitly disclose the salts of phosphonate of instant claim 20, but the way claim 20 is written, there is no requirement to actually select such particular salts – the salts are further defined in claim 20 but there is no claim requirement to actually select such salts. It is also noted that claim 21 requires the composition to be free of added strong inorganic acid. Carr et al. clearly teach use of strong organic acids. In re Sivaramakrishnan, 213 USPQ 441 (CCPA 1982). Additionally, it is noted that Carr et al. do not explicitly disclose that the composition, when diluted at least one fold, has activity against microorganisms as set forth in applicant's claims 22-23. However, it is the Examiner's position that Carr et al. clearly and explicitly disclose compositions that contain the same ingredients as

applicant's claimed compositions. Therefore, the same activity must necessarily be present in Carr's compositions.

With respect to the method for making claims 24-32, the following further remarks are noted. Carr et al. clearly teach mixing of the three starting ingredients, for they make up the in situ antimicrobial and disinfecting composition of Carr's invention. See Carr's Examples 1-44 on pages 14-22. Carr et al. teach that the mixture of ingredients results in an equilibrium mixture of peracids and precursors (p. 3, line 17 to p. 4, line 15). Immediate generation of the highly active ester-peracid is taught, as well as storing for several weeks such as 3 weeks (21 days) to 6 weeks (p. 4, lines 16-33). Dilution for making the use composition has already been discussed. Continuous additions of ingredients are exemplified (pp. 14-22). The term "batch-wise" is open to small batches such as those used by Carr et al. in their examples (id.). The percentage amounts have been discussed above.

The claims are thereby anticipated.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over obvious over Carr et al. (WO 98/28267) in view of Hei (US 6,024,986), Chemical abstracts 134:97683 and Richter et al. (WO 00/30690).

Teachings of Carr et al. are discussed above and the discussion there is incorporated herein to avoid repetition.

Hei is cited to establish that chelating agents such as 1-hydroxyethylidene-1,1-diphosphonic acid (HEDP, "DEQUEST") are known to enhance the stability and biological activity of peroxyacids and also to sequester hardness ions (column 7, lines 7-15).

Chemical abstracts 134:97683 is cited to establish that peracetic acid is known to have activity against *Chaetomium funicola* and *arthrinium sacchari.*

The publication by Richter et al. discloses that peracetic acid + hydrogen peroxide is known to control *Bacillus cereus* at 40-60^{o}C (pages 32-37).

Claims 1-33, 35, 42-46 have already been rejected as being anticipated by Carr et al., so there is no patentable difference between the those claims and Carr et al. There are several differences between the invention of the remaining claims and the primary reference by Carr et al.

The 1:1 dilution factor (applicant's claim 34) is not explicitly disclosed by Carr et al. but such dilution factor would have been well within the skill of the ordinary skilled artisan, who would have been motivated to obtain a target peracid and/or hydrogen peroxide concentration by

appropriately diluting the more concentrated solution. Depending on the initial strength of the concentrate, 1:1 dilution factor would have been fairly suggested.

The specific microorganisms of claims 36-41 and their specific logarithmic control factor are not expressly disclosed by Carr et al. However, percarboxylic acids and hydrogen peroxide are well known disinfectants. From the known activity of peracetic acid and hydrogen peroxide against the claimed microorganisms, one having ordinary skill in the art would have been motivated to also utilize the in situ antimicrobial and disinfecting composition taught by Carr et al. to control such microorganisms. Reduction by at least one log factor within 10 seconds at 60°C is claimed for applicant's composition, so the same must hold for Carr's composition because Carr's composition is made up of the same ingredients as applicant's composition.

The cold aseptic bottling of food, beverage or pharmaceuticals, as claimed in claim 47, is not explicitly disclosed by Carr et al. but there's only a technical difference. Although a beverage container is not expressly set forth, Carr et al. nonetheless teach disinfecting beverages and containers of all types (see from p. 13, line 21 to p. 14, line 23). Immersion or spraying of articles is taught (p. 14, lines 12-15). Therefore, the features of claim 47 is fairly suggested.

Therefore, the claimed invention, as a whole, would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made, because every element of the invention and the claimed invention as a whole have been fairly suggested by the teachings of the cited references.

A facsimile center has been established in Technology Center 1600. The hours of operation are Monday through Friday, 8:45 AM to 4:45 PM. The telecopier numbers for accessing the facsimile machines are (703) 308-4556 or (703) 305-3592.

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Examiner Pak whose telephone number is (703) 308-4538. The Examiner can normally be reached on Monday through Friday from 7:30 AM to 4 PM.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's Supervisor, Mr. José Dees, can be reached on (703) 308-4628.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-1235.

JOHN PAR
PRIMARY EXAMINER
GROUP 1600